AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A system for reducing noise in a detection sensor detection, comprising:

a raw digital image of pixels corresponding to energy received at the sensor;

a non-uniformity correction device to remove estimated fixed pattern noise from the pixels of the raw digital image to generate a corrected digital image; and

an array of coefficients to determine the estimated fixed pattern noise, wherein the array of coefficients are based on actual fixed pattern noise measurements that are parametrically fitted over a plurality of temperature ranges, wherein said corrected digital image is generated based on a low estimated fixed pattern noise when a current frame of said raw digital image is less than a middle temperature intensity count, otherwise the corrected digital image is generated based on a high estimated fixed pattern noise.

~~wherein the estimated fixed pattern noise is a difference between a standard deviation of a residual noise and a standard deviation of a temporal noise within a frame.~~

2. (Previously Presented) The system of claim 1, wherein each of the plurality of temperature ranges has an integration time for the sensor.

3. (Original) The system of claim 2, further comprising at least one capacitor to determine the integration time for the sensor.

4. (Original) The system of claim 2, wherein the integration time is an integration time for a focal plane array for the sensor.

5. (Original) The system of claim 4, wherein the raw digital image corresponds to the energy received at the focal plane array.

6. (Original) The system of claim 1, wherein the array of coefficients includes linear coefficients to determine the estimated fixed pattern noise.

7. (Original) The system of claim 1, wherein the non-uniformity correction device includes an estimator to determine the estimated fixed pattern noise over a set of the plurality of temperature ranges.

8. (Original) The system of claim 1, wherein the non-uniformity correction device includes a plurality of estimators to determine the estimated fixed noise over a set of the plurality of temperature ranges.

9. (Original) The system of claim 1, wherein the array of coefficients includes a first set of coefficients and a second set of coefficients.

10. (Original) The system of claim 9, wherein the first set of coefficients correlate to a first set of the plurality of temperature ranges, and the second set of coefficients correlate to a second set of the plurality of temperature ranges.

11. (Currently Amended) A sensor system for detecting candidate targets from received energy at an array of detectors within the sensor system, comprising:

integration capacitors to control an integration time for the array of detectors to generate a voltage corresponding to the received energy;

an analog-to-digital converter to convert the voltage to a raw digital image having pixel data of the candidate targets;

a non-uniformity correction device to estimate the fixed pattern noise using an array of measurement-based parametrically fitted coefficients corresponding to a temperature range for the sensor system and to remove the estimated fixed pattern noise from the raw digital image,

~~wherein the non-uniformity correction device estimates the fixed pattern noise based on a difference between a standard deviation of a residual noise and a standard deviation of a temporal noise within a frame;~~ and

a corrected image generated by the non-uniformity correction device that emphasizes the candidate targets in the pixel data, wherein said corrected digital image is generated based on a low estimated fixed pattern noise when a current frame of said raw digital image is less than a middle temperature intensity count, otherwise the corrected digital image is generated based on a high estimated fixed pattern noise.

12. (Original) The system of claim 11, wherein the received energy is infrared radiant flux.

13. (Previously Presented) The system of claim 11, wherein the array of coefficients includes gains and offsets determined from actual fixed pattern noise measurements.

14. (Previously Presented) The system of claim 11, wherein the integration time corresponds to the temperature range.

15. (Currently Amended) A method for reducing noise in a sensor, comprising:

converting received energy into a raw digital image;

estimating fixed pattern noise in the raw digital image by using an array of coefficients of parametrically fitted measurements of actual fixed pattern noise over a temperature range of a plurality of temperature ranges,

~~wherein the estimating fixed pattern noise is a difference between a standard deviation of a residual noise and a standard deviation of a temporal noise within a frame;~~ and

generating a corrected digital image by removing the estimated fixed pattern noise from the raw digital image, wherein said corrected digital image is generated based on a low estimated fixed pattern noise when a current frame of said raw digital image is less than a middle temperature intensity count, otherwise the corrected digital image is generated based on a high estimated fixed pattern noise.

16. (Original) The method of claim 15, wherein the estimating includes applying a gain and an offset from the array of coefficients to pixel intensity in the raw digital image.

17. (Original) The method of claim 15, further comprising generating a voltage from an array of detectors according to the received energy during an integration time of at least one capacitor.

18. (Original) The method of claim 17, further comprising adjusting the integration time.

19. (Original) The method of claim 15, wherein the estimating includes selecting the array of coefficients according to the temperature range.

20. (Currently Amended) A method for reducing noise in a digital image corresponding to energy received at a sensor, comprising:

estimating fixed pattern noise in the digital image using an array of coefficients for a temperature range of a plurality of temperature ranges, wherein the array of coefficients represent a gain and an offset of the fixed pattern noise,

~~wherein the estimating fixed pattern noise is a difference between a standard deviation of a residual noise and a standard deviation of a temporal noise within a frame;~~ and

removing the estimated fixed pattern noise from the digital image to generate a corrected digital image, wherein said corrected digital image is generated based on a low estimated fixed pattern noise when a current frame of the digital image is less than a middle temperature intensity count, otherwise the corrected digital image is generated based on a high estimated fixed pattern noise.

21. (Original) The method of claim 20, further comprising converting the received energy into the digital image.

22. (Original) The method of claim 20, wherein the estimating includes applying the gain and the offset as a linear equation to pixel intensity within the digital image.

23. (Original) The method of claim 20, further comprising highlighting non-noise components within the corrected digital image.

24. (Currently Amended) A computer program product comprising a computer useable medium having computer readable code embodied therein for reducing noise in a sensor, the computer program product adapted when run on a computer to effect steps including:

converting received energy into a raw digital image;

estimating fixed pattern noise in the raw digital image by using an array of coefficients of parametrically fitted measurements of actual fixed pattern noise over a temperature range of a plurality of temperature ranges,

~~wherein the estimating fixed pattern noise is a difference between a standard deviation of a residual noise and a standard deviation of a temporal noise within a frame;~~ and

generating a corrected digital image by removing the estimated fixed pattern noise from the raw digital image, wherein said corrected digital image is generated based on a low estimated fixed pattern noise when a current frame of said raw digital image is less than a middle temperature intensity count, otherwise the corrected digital image is generated based on a high estimated fixed pattern noise.

25. (Currently Amended) A computer program product comprising a computer useable medium having computer readable code embodied therein for reducing noise in a digital image corresponding to energy received at a sensor, the computer program product adapted when run on a computer to effect steps including:

estimating fixed pattern noise in the digital image using an array of coefficients for a temperature range of a plurality of temperature ranges, wherein the array of coefficients represent a gain and an offset of the fixed pattern noise,

~~wherein the estimating fixed pattern noise is a difference between a standard deviation of a residual noise and a standard deviation of a temporal noise within a frame;~~ and

removing the estimated fixed pattern noise from the digital image to generate a corrected digital image, wherein said corrected digital image is generated based on a low estimated fixed pattern noise when a current frame of the digital image is less than a middle temperature intensity count, otherwise the corrected digital image is generated based on a high estimated fixed pattern noise.